CLAIMS:

1. An exhaust processor comprising

an emission abatement device including at least two soot filters arranged to lie in parallel relation to one another to collect particulate matter from a flow of unfiltered exhaust gas passed through the soot filters, each soot filter including an inlet end configured to admit unfiltered exhaust gas and an outlet end configured to discharge filtered exhaust gas,

an exhaust gas supplier coupled to the emission abatement device and adapted to conduct a flow of unfiltered exhaust gas to the emission abatement device, and

a filter regenerator coupled to the emission abatement device and configured to supply a flow of regenerative fluid to the emission abatement device to burn off particulate matter collected in the soot filters included in the emission abatement device,

wherein the emission abatement device further includes a regeneration chamber associated with the inlet end of each soot filter, each regeneration chamber includes a flow passage, an outlet configured to discharge fluid from the flow passage into the inlet end of the soot filter associated with said flow passage, a filtration inlet coupled to the exhaust gas supplier and configured to pass unfiltered exhaust gas flowing through the exhaust gas supplier into the flow passage, and a regeneration inlet coupled to the filter regenerator and configured to pass regenerative fluid into the flow passage, and

wherein the filter regenerator includes a filtration inlet closer associated with each regeneration chamber and mounted for movement between an opened position allowing flow of unfiltered exhaust gas into the flow passage of the regeneration chamber and a closed position blocking flow of unfiltered exhaust gas into the flow passage of the regeneration chamber, a regeneration inlet closer associated with each regeneration chamber and mounted for movement between an opened position allowing flow of regenerative fluid into the flow passage of the regeneration chamber and a closed position blocking flow of regenerative fluid into the flow passage of the regeneration chamber, and a closer operator configured to move the filtration inlet closer associated with a first of the regeneration chambers to the opened position and the regeneration inlet closer associated with the first of the

regeneration chambers to the closed position to allow only unfiltered exhaust gas to flow through the soot filter associated with the first of the regeneration chambers and configured to move the filtration inlet closer associated with a second of the regeneration chambers to the closed position and the regeneration inlet closer associated with the second of the regeneration chambers to the opened position to allow only regenerative fluid to flow through and regenerate the soot filter associated with the second of the regeneration chambers while unfiltered exhaust gas is flowing through and being filtered by the soot filter associated with the first of the regeneration chambers.

2. The exhaust processor of claim 1, wherein the emission abatement device further includes an exhaust gas discharger adapted to be coupled to an exhaust pipe and a housing arranged to interconnect the exhaust gas supplier and the exhaust gas discharger, the housing is formed to include an interior region containing the soot filters in a downstream portion of the housing in close proximity to the exhaust gas discharger, and the regeneration chambers are located in an upstream portion of the interior region of the housing in a position interposed between the exhaust gas supplier and the soot filters.

3. The exhaust processor of claim 2, wherein the housing includes an exterior side wall extending between the exhaust gas supplier and the exhaust gas discharger and the exterior side wall is formed to include the regeneration inlets associated with the regeneration chambers.

4. The exhaust processor of claim 2, wherein the housing includes a pipe associated with each soot filter, each soot filter is contained in one of the pipes, each pipe interconnects the exhaust gas supplier and the exhaust gas discharger, and each pipe includes one of the regeneration chambers and is formed to include one of the regeneration inlets.

5. The exhaust processor of claim 1, wherein the filter regenerator includes an air supply, a first pipe formed to include a passage to conduct air from the air supply to the regeneration inlet of a first of the regeneration chambers, a first heater located in the passage of the first pipe to heat air flowing therethrough, a second pipe formed to include a passage to conduct air from the air supply to the regeneration inlet of a second of the regeneration chambers, and a second heater located in the passage of the second pipe to heat air flowing therethrough.

6. The exhaust processor of claim 5, wherein the emission abatement device further includes a housing containing the regeneration chambers and soot filters, the housing includes a side wall defining the regeneration inlets, the first pipe is coupled to the side wall at a first of the regeneration inlets, and the second pipe is coupled to the side wall at the second of the regeneration inlets.

7. The exhaust processor of claim 5, wherein the regeneration inlet closer associated with the first of the regeneration chambers is configured to provide means for blocking a flow of air in the passage formed in the first pipe through the regeneration inlet of the first of the regeneration chambers and the regeneration inlet closer associated with the second of the regeneration chambers is configured to provide means for blocking a flow of air in the passage formed in the second pipe through the regeneration inlet of the second of the regeneration chambers.

8. The exhaust processor of claim 1, wherein the filter regenerator includes a burner, an air supply configured to supply a flow of air to the burner, an air valve configured to control the flow of air to the burner, a fuel supply configured to supply a flow of fuel to the burner, and a fuel valve configured to control the flow of fuel to the burner, and the burner is configured to combust a mixture of air from the air supply and fuel from the fuel supply to provide the regenerative fluid.

9. The exhaust processor of claim 8, wherein the filter regenerator includes a pipe associated with each regeneration inlet, each pipe is formed to include a passage arranged to conduct regenerative fluid discharged from the burner to the regeneration inlet associated with the pipe, and each regeneration inlet closer is associated with one of the pipes to allow a flow of regenerative fluid from the burner through the passage formed in the one of the pipes to the regeneration inlet associated with the one of the pipes when the regeneration inlet closer is in its opened position and to block a flow of regenerative fluid from the burner through the passage formed in the one of the pipes to the regeneration inlet associated with the one of the pipes when the regeneration inlet closer is in its closed position.

10. The exhaust processor of claim 1, wherein the filtration inlet closer associated with a first of the regeneration chambers includes a valve plate supported for pivotable movement about a pivot axis in the filtration inlet formed in the first regeneration chamber and means for pivoting the valve plate about the pivot axis between a closed position occluding the filtration inlet formed in the first regeneration chamber and an opened position wherein a first portion of the valve plate

lies in a flow passage formed in the exhaust gas supplier and a second portion of the valve plate lies in the flow passage formed in the first regeneration chamber to partition the filtration inlet formed in the first regeneration chamber to provide a first flow-conducting passage through the filtration inlet formed in the first regeneration chamber on one side of the valve plate and also provide a second flow-conducting passage through the filtration inlet formed in the first regeneration chamber on an opposite side of the valve plate.

11. The exhaust processor of claim 8, wherein each valve plate has a cross section configured as a quarter section of a circle.

12. An exhaust processor comprising

an emission abatement device including at least three soot filters arranged to collect particulate matter from a flow of unfiltered exhaust gas passed through the soot filters,

an exhaust gas supplier coupled to the emission abatement device and adapted to conduct a flow of unfiltered exhaust gas to the emission abatement device, and

a filter regenerator coupled to the emission abatement device and configured to supply a flow of regenerative fluid to each of the soot filters to burn off particulate matter collected in the soot filters, the filter regenerator including a detector located to communicate with filtered exhaust gas discharged from the soot filters and configured to detect a predetermined characteristic of the filtered exhaust gas associated with onset of occlusion of passages in the soot filters owing to accumulation of particulate matter therein, a regenerative fluid supplier coupled to the emission abatement device and configured to supply a flow of regenerative fluid to the emission abatement device to burn off particulate matter collected in the soot filters, an exhaust gas flow router coupled to the exhaust gas supplier to regulate flow of unfiltered exhaust gas to each soot filter, a regenerative fluid flow router coupled to the regenerative fluid supplier to regulate flow of regenerative fluid to each soot filter, and a regeneration sequencer coupled to the detector, the exhaust gas flow router, and the regenerative fluid flow router and configured to regenerate one soot filter at a time in series using regenerative fluid provided by the regenerative fluid supplier while remaining soot filters operate to receive a flow of unfiltered exhaust gas from the exhaust gas supplier, the regeneration sequencer being programmed to regenerate a first of the soot filters in response to receipt of a first regeneration activation signal

generated by the detector, a second of the soot filters in response to receipt of a second regeneration activation signal generated by the detector, and a third of the soot filters in response to receipt of a third regeneration activation signal generated by the detector.

13. The exhaust processor of claim 12, wherein the regeneration sequencer is configured to operate the exhaust gas flow router to allow flow of unfiltered exhaust gas to all soot filters except for one of the soot filters during the entire time that the one of the soot filters is regenerated.

14. The exhaust processor of claim 12, wherein the exhaust gas flow router includes an exhaust gas valve associated with each soot filter and the regeneration sequencer is configured to cause movement of each exhaust gas valve between an opened position allowing flow of unfiltered exhaust gas to the associated soot filter and a closed position blocking flow of unfiltered exhaust gas to the associated soot filter.

15. The exhaust processor of claim 14, wherein the regenerative fluid flow router includes a regenerative fluid valve associated with each soot filter and the regeneration sequencer is configured to cause movement of each regenerative fluid valve between an opened position allowing flow of regenerative fluid to the associated soot filter and a closed position blocking flow of regenerative fluid to the associated soot filter.

16. The exhaust processor of claim 12, wherein the regenerative fluid flow router includes a regenerative fluid valve associated with each soot filter and the regeneration sequencer is configured to cause movement of each regenerative fluid valve between an opened position allowing flow of regenerative fluid to the associated soot filter and a closed position blocking flow of regenerative fluid to the associated soot filter.

17. An exhaust processor comprising

an emission abatement device including a soot filter arranged to collect particulate matter from a flow of unfiltered exhaust gas passed through the soot filter,

an exhaust gas supplier coupled to the emission abatement device and adapted to conduct a flow of unfiltered exhaust gas to the emission abatement device,

a filter regenerator coupled to the emission abatement device and configured to supply a flow of regenerative fluid to the soot filter to burn off particulate matter collected in the soot filter, the filter regenerator including a

temperature sensor positioned to lie in thermal communication with an outlet end of the soot filter and configured to sense an outlet temperature associated with the outlet end, a pipe formed to include a passage to conduct regenerative fluid to the soot filter, a flow rate changer associated with the pipe and configured to change the flow rate of regenerative fluid flowing therethrough to reach the soot filter, and a temperature changer associated with the pipe and configured to change the temperature of regenerative fluid flowing therethrough to reach the soot filter, and

a controller coupled to each of the flow rate changer and the temperature changer and temperature sensor and configured to operate the flow rate changer and the temperature changer to cause a change in at least one of the flow rate and temperature of the regenerative fluid flowing through the pipe to reach the soot filter in response to the outlet temperature sensed by the temperature sensor to maintain the outlet temperature at a regeneration temperature during regeneration of the soot filter.

18. The exhaust processor of claim 17, wherein the filter regenerator includes an air supply, the flow rate changer includes a valve positioned to change the flow rate of a flow of air from the air supply, the temperature changer includes an electric heater positioned to change the temperature of the flow of air from the air supply, and the controller is coupled to the valve and the electric heater and is configured to control operation of the valve and the electric heater in response to the outlet temperature sensed by the temperature sensor.

19. The exhaust processor of claim 18, wherein the electric heater is positioned in the passage.

20. The exhaust processor of claim 17, wherein the filter regenerator includes a burner, an air supply, and a fuel supply, the flow rate changer includes an air valve configured to control a flow of air from the air source to the burner, the temperature changer includes a fuel valve configured to control a flow of fuel from the fuel source to the burner, the burner is configured to combust a mixture of air received from the air source via the air valve and fuel received from the fuel source via the fuel valve to provide the regenerative fluid, and the controller is coupled to the air valve and the fuel valve and configured to control operation of the air valve and the fuel valve in response to the outlet temperature sensed by the temperature sensor.